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Case report

Haemothorax and thoracic spinal fracture A case for early stabilization

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1. Introduction

Fractures of the thoracic spine with complete neurological deficits are usually approached with a certain amount of surgical nihilism as there is little expectation for return of nerve function. However, a thoracic spinal injury could present as a life threatening injury, and prompt detection followed by early stabilization could prevent considerable morbidity and mortality. We present a case-report to illustrate this.

2. Case report

A 28 year old male motor-cycle rider sustained multiple injuries including a neurologically complete fracture–dislocation at the fourth thoracic vertebra (Figs. 1 and 2). Bilateral haemopneumothoraces were treated with bilateral chest drains.

A right exploratory thoracotomy, performed in view of a persistent haemothorax, revealed no visceral or vascular injury and the site of the bleeding was found to be raw edges of bone at the fracture site.

Post-operative chest drainage continued until day 7. The lungs were fully expanded and therefore the chest drains removed. On transfer to a Spinal Injuries Unit the patient again became breathless and further pleural collections were detected requiring bilateral chest drains. The right chest drain again drained in excess of 1 l of fresh blood. The patient was returned to theatre where the dislocated spine was reduced and stabilized.

Post-operatively the drainage reduced significantly and ceased by 48 h.

3. Discussion

In this patient the persistent haemothorax was a result of bleeding from the edges of bone at the unstable fracture site. Stabilization of the thoracic spine controlled the bleeding, hence it appears that movement of the unstable thoracic spine led to further bleeding and prevented spontaneous haemostasis.

There is an association of pleural collections with thoracic spinal fractures. In a study of 72 patients [1] with fractures of the thoracic spine, 24% were found to have a haemothorax and in another study of 105 cases [2], 32% of patients presented with a haemothorax. Thus respiratory distress or cardio–vascular collapse in a patient with a thoracic spinal injury should lead to a strong suspicion of pleural haemorrhage.

Stabilization of the spine seems to be the most appropriate way of stopping pleural haemorrhage in such a situation. This is not dissimilar to the current concepts in the management of pelvic trauma, where unstable pelvic fractures require emergency stabilization to prevent intra-pelvic bleeding and hypovolaemic shock.

References

[1] Freysz M, Adamon O, Wilkening M, Sautreaux JL. Hemothorax et fractures de la colonne dorsale. Sem-Hop 1983;59(32):2229–31.

[2] Argenson C, Bouleau P, de Peretti F, Lovet J. Les fractures du rachis thoracique (T1–T10). A propos de 105 cas. Rev Chir Orthop 1989;75(6):370–86.

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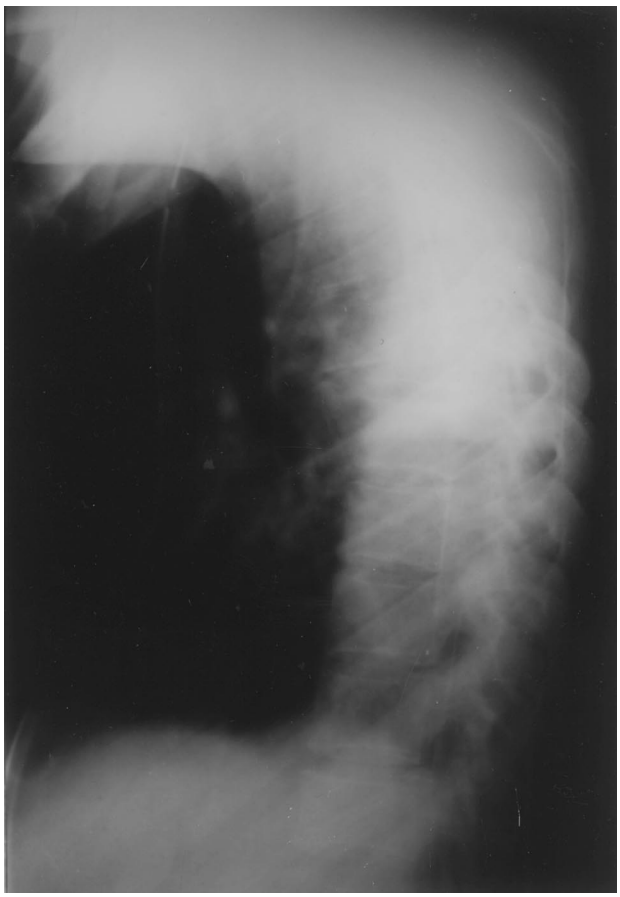

Fig. 1. Lateral X-ray showing displaced fracture–dislocation at T4.

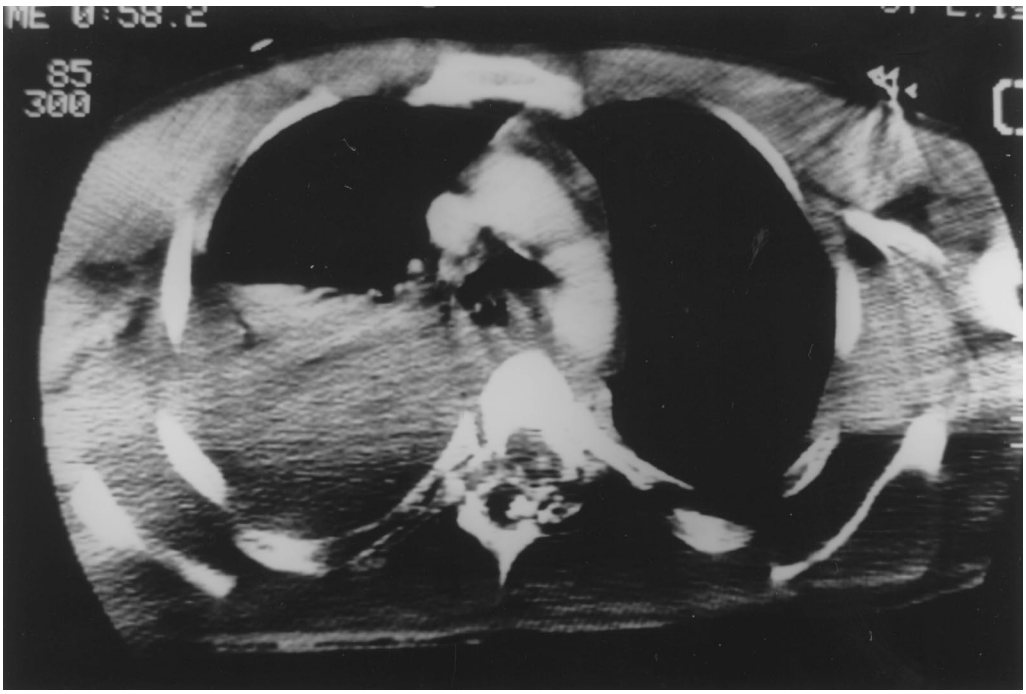

Fig. 2. CT scan of the chest showing displacement of the spine as a ''double'' image, and collection of blood in the right haemothorax.